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Bonnet et al.

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(54) **DETECTION OF DATA IN A SEQUENCE OF CHARACTERS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 252 days.

This patent is subject to a terminal disclaimer.

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G06F 17/27 (2006.01)
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(52) **U.S. Cl.**
CPC ***G06F 17/2705*** (2013.01); ***G06F 17/2715*** (2013.01); ***G06K 9/723*** (2013.01); ***G06K 9/726*** (2013.01); *G06K 2209/01* (2013.01)

(58) **Field of Classification Search**
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See application file for complete search history.

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(57) **ABSTRACT**

A method for detecting data in a sequence of characters or text using both a statistical engine and a pattern engine. The statistical engine is trained to recognize certain types of data and the pattern engine is programmed to recognize the grammatical pattern of certain types of data. The statistical engine may scan the sequence of characters to output first data, and the pattern engine may break down the first data into subsets of data. Alternatively, the statistical engine may output items that have a predetermined probability or greater of being a certain type of data and the pattern engine may then detect the data from the output items and/or remove incorrect information from the output items.

18 Claims, 11 Drawing Sheets